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PORAY-KOSHITS ON HIS 70th BIRTHDAY

Academician V. Rodionov

Academician A. Ye. Poray-Koshits is the foremost specialist in the chemistry of dyestuffs and an outstanding expert in the technology of dyeing. He did much to develop the dyestuff industry. Since the early beginnings of that industry he has been a leader in this branch of chemical technology, and in promoting research work on our raw materials, on processing intermediate products, and on synthetic dyes.

In his Leningrad laboratory, an affiliate of the Scientific Research Institute for Semifinished Products and Dyestuffs (NIPOIK) was organized. It processed more than 20 different new products for our dye industry.

Many workers occupying honored positions in the industry and institute or in the higher and technical schools came from his institute. For more than 40 years he did an immense amount of work as an instructor in the Leningrad Institute of Chemical Technology.

Besides all this, he devoted much time to evaluating inventions. For many years he was director of the Office of the Evaluation Committee for Inventions.

We must also mention the enormous work he accomplished in editing the Zhurnal Prikladnoy Khimii (Journal of Applied Chemistry), and the many books, translations, handbooks, and studies, which were published due to his assistance.

It is possible to mention only a few of the most important fields of scientific research in which Poray-Koshits worked:

1. Work on the theory of valence in organic compounds. He investigated the mobility of hydrogen atoms in methylene and methyl groups of aromatic heterocyclic compounds in his studies of condensation with aldehydes, nitro compounds, and diazo couplings. He discovered the possibility of diazo couplings in methyl groups of mesomethylacridine and trinitrotoluene.

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2. Work on the theory of color of organic compounds. His "oscillation theory" of a connection between the color of organic compounds and their constitution anticipated modern ideas on the mesomerism (resonance) of organic compounds.

3. Research work in color photography. This confirmed experimentally the theory that the substances formed on a color plate after development belong to the class of indamines and azomethyls.

4. Work on the production of furfurol from agricultural and industrial waste products. This work is very important from a technological point of view.

5. Technical research on the reduction of nitro, nitroso, and azo-compounds and indophenols--closely related to the classic research of N. N. Zinin.

6. In the complicated field of perylene dyestuffs improvement of methods for the preparation of imides, arylimides and imidazol derivatives of perylene tetracarboxylic acid.

7. Extensive research work on diazonium compounds and on complex substantive dyestuffs yielded data on the kinetics of processes and improved plant procedures for the production of stable diazo-compounds and dyestuffs producing pure shades.

Besides all this, Poray-Koshits accomplished a great deal of work on textile processing in general and dyeing in particular. His quantitative method of estimating the degree of salt formation between anions of dyestuffs and cations of the fiber, or between cations of dyestuffs and anions of the fiber, made it possible to establish the fact that the dyeing process of polypeptide fibers was based on salt formation.

His work on spectrophotometry of fibers is also of practical interest. He and his coworkers compiled an atlas of absorption spectra for dyestuffs on fibers, which could serve to identify them.

This short account shows what an outstanding figure Poray-Koshits is and how closely his work is connected with the development of industrial dyeing.

Not long ago he suggested many interesting measures to improve higher technical training in the USSR.

As an active member of the Mendeleyev Society--he is now vice-president--Poray-Koshits made a brilliant historical report on the society's activity at the gala jubilee session on the 75th anniversary of the Russian Chemical Society.

Poray-Koshits began his creative work when the dyestuff industry was in a neglected state, and research workers in this line could be counted on one's fingers. He and Prof V. V. Sharvin were the outstanding figures. Most of the specialists had gone into the textile industry, which was well-developed in Tsarist Russian and completed successfully on the world market.

I was manager of the chemical laboratory in the Russian section of the German Bayer Dye Works when I first heard the name of Poray-Koshits and read his "Survey of Research on the Relation Between the Constitution and Color of Organic Compounds." This was almost the first Russian publication on the subject at a time when scores of articles in that field were appearing in Germany, but his later work was chiefly concerned with problems of dyeing and I felt that he, like most Russian specialists in that line had branched off into the textile industrial field far from the chemical or technological problems of dyestuffs.

When World War I broke out, Poray-Koshits, then in Petrograd, began to take a greater interest in developing the production of dyestuffs in Russia. Both the

army and industry lacked necessary products. Raw materials for explosives, gunpowder, dyes, and pharmaceutical preparations were either unavailable or in short supply.

The war of 1914-1917 had sharp repercussions on all the work done during that period. Many excellent plans were not carried out, and it was only at the end of the war that the country could again begin creative work, but the activities of A. Ye. Poray-Koshits never ceased. He kept on working on the chemistry of dyestuffs both at his desk at the Leningrad Technological Institute, and for the sailine dye industry. Together with Professors N. M. Kizhner and V. V. Sharvin, now deceased, and myself, he was a member of the Soviet Central Laboratory of the "Anil-trest."

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